

Notice of Allowability

Application No.

10/648,789

Examiner

Steven E. Holton

Applicant(s)

MIKAMI ET AL.

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the request for continued examination filed on 7/30/2007.
2. ☒ The allowed claim(s) is/are 4,5,9-12 and 15-18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. This Office Action is made in response to applicant's amendment filed on 7/30/2007. Claims 4, 5, 9-12, and, 15-18 are currently pending in the application. An action follows below:
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Keith George on 9/19/07.

The application has been amended as follows:

Please amend claim 4 as follows:

4. A display device comprising a power supply unit for supplying power, a display unit for displaying an image, a data input circuit for inputting display data corresponding to an image to be displayed on the display unit, a data buffer for storing the input display data, rewrite input means for requesting a change in the display content of the display unit and a control circuit, wherein:

said power supply unit includes a power supply which varies a power supply ability with time or has average produced power lower than average power required to rewrite one screen, a power storage unit which as a capacity of stored electric power for

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holding power higher than the average power required to rewrite one screen and a stored power detecting circuit which detects an amount of electric power stored in said power storage unit;

said power supply is connected to said display unit via said power storage unit;

said display unit includes a matrix display area, in which a large number of pixels having an optical modulating function capable of changing brightness, a reflectance, a transmittance and colors by a voltage or a current are arranged in a matrix, and a driving circuit including a sequence circuit for driving the matrix display area;

said pixels have a pixel memory for holding display data and are driven according to a pixel rewrite period for rewriting a display content of said display unit and a pixel holding period for holding the display content; and

said control circuit controls said driving circuit to rewrite a still screen by rewriting a pixel display content when said stored power detecting circuit outputs a stored power detection signal indicative of a detected amount of stored electric power not less than the average power required for at least rewriting of a screen of the display unit, and

~~said control~~ said control circuit controls the driving circuit so as to rewrite the pixel display content of the display unit repetitively by rewriting the screen continuously to thereby display a moving picture, when said stored power detecting circuit detects a stored power detection signal indicative of a detected amount of stored electric power not less than 6the average power required to rewrite the screen continuously.

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3. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a display device with a power system for storing ambient energy and operating the device in different modes based on the amount of stored energy. Independent claims 4 and 5 identify the uniquely distinct features the control circuit controlling the driving circuit to rewrite a still screen when the detected amount of stored power is not less than the average power required for rewriting a single screen of the display and the control circuit controlling the driving circuit to repetitively rewrite the display screen to produce a moving picture when the detected amount of stored power is not less than the average power required to rewrite the screen continuously. The closest prior art, Ochi (USPN: 7088355; previously referred to as Minolta in other Office Actions) and Richley et al. (USPN: 6348908) disclose display devices that store ambient energy and redraw display devices when sufficient power is stored, but fail to address providing still or moving images based on amounts of stored power, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious. The Applicant's Arguments provided on pages 7-11 provide further explanation of the reasons for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571) 272-7903. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven E. Holton
Division 2629
September 19, 2007

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

